



COMMUNITY DEVELOPMENT DEPARTMENT
Building Inspection Division
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Water Heater Installations

January 2014

Permit Requirements

When do I need a permit?

A water heater (plumbing) permit is always required for new and replacement water heater installations. This allows the Building Safety & Inspection field inspector to ensure safe operation and appropriate strapping.

During emergency situations when a water heater appliance has been installed without first obtaining a permit, it shall be obtained on the next work day following installation. A double fee permit penalty may otherwise be added for doing the work without a permit.

Bracing and Installation

Enforcement

As adopted by the City of Lodi, Chapter 5 of the 2013 California Plumbing Code (CPC) & 2013 Mechanical Code (CMC) enforces the construction, location and installation of fuel burning water heaters.

Location

Domestic water heaters generating a glow, spark or flame capable of igniting flammable vapors may be installed in a residential garage, provided the pilots, burners or heating elements and switches are at least 18-in above the floor level.

A water heater installed in a garage but enclosed in a separate, approved compartment having access only from outside the garage, may be installed at floor level provided the combustion air is taken from the exterior of the garage. Fuel-burning water heaters having sealed combustion chambers need not be elevated.

Water heater installations in bedrooms and bathrooms shall comply with one of the following.

(1) Fuel-burning water heaters may be installed in a closet located in the bedroom or bathroom provided the closet is equipped with a listed, gasketed door assembly and a listed self-closing, device. The door assembly shall be installed with a threshold. All combustion

air shall be obtained from the out side. The closet shall be for the exclusive use of the water heater.

(2) Water heaters shall be the direct vent type

Protection

Bollards

When water heaters are located in the path subject to mechanical damage by vehicles, a suitable barrier shall be installed in front of it.

Strapping

In seismic design categories C, D, F and F, water heaters shall be anchored or strapped to resist movement during an earthquake. Straps are to be installed at the upper and lower third (1/3) of the water heater (lower strap 4-in above controls). The straps shall be connected so that the fasteners and straps cannot dislodge or loosen. Refer to page 2 for sample illustrations.

When supported on the ground, water heaters can rest on level concrete or other approved base extending not less than 3-in above adjacent ground level.

Capacity

The minimum capacity for water heaters shall be in accordance with the first hour rating as listed in the table below.

Table 5-1: Water Heater Minimum Capacity (2013 CPC)¹

| Number of Bathrooms | 1 to 1.5 | | | 2 to 2.5 | | | | 3 to 3.5 | | | |
|--|----------|----|----|----------|----|----|----|----------|----|----|----|
| | 1 | 2 | 3 | 2 | 3 | 4 | 5 | 3 | 4 | 5 | 6 |
| First Hour Rating ² (Gallons) | 42 | 54 | 54 | 54 | 67 | 67 | 80 | 67 | 80 | 80 | 80 |

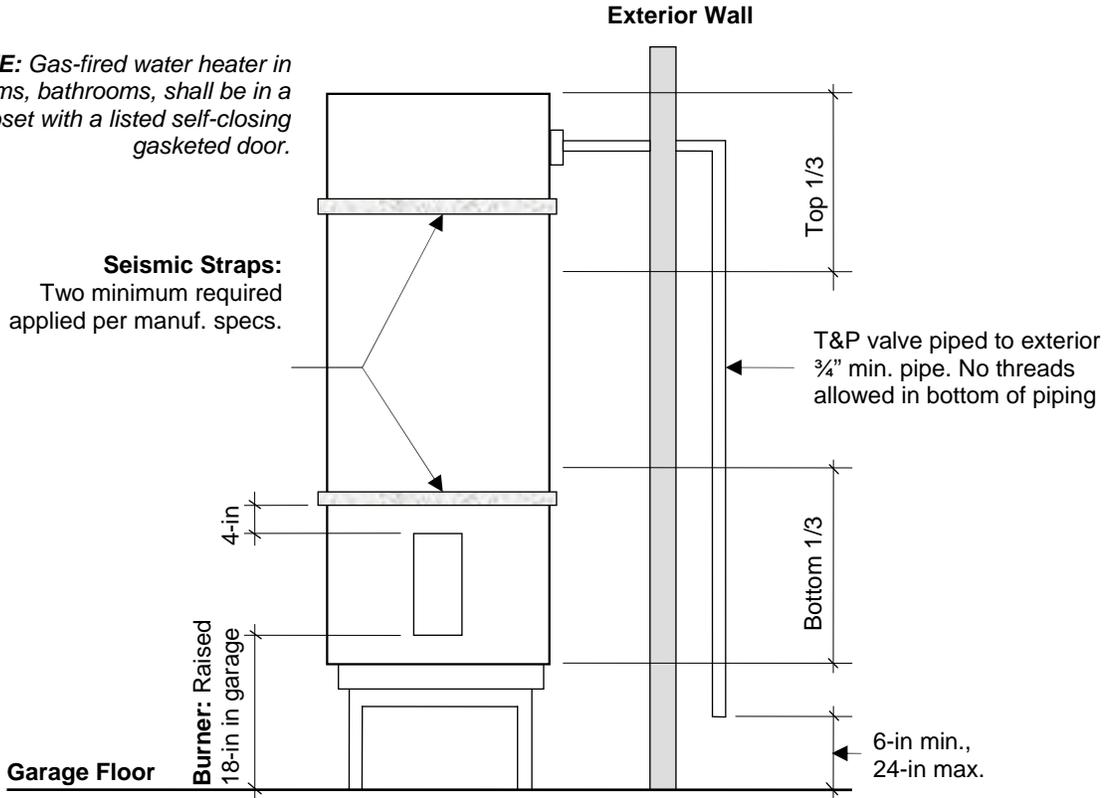
Notes:

¹The first hour rating is found on the "Energy Guide" label.

²Non-storage and solar water heaters shall be sized to meet the appropriate first hour rating as shown in the table.

NOTE: Gas-fired water heater in bedrooms, bathrooms, shall be in a closet with a listed self-closing gasketed door.

Seismic Straps:
Two minimum required applied per manuf. specs.



WATER HEATER – ELEVATION

COMBUSTION AIR (2013 CMC, Chapter 7)

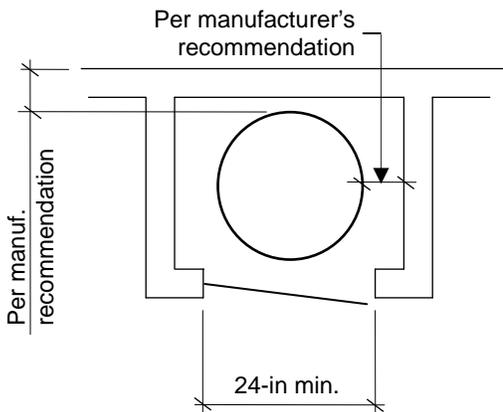
Indoor Combustion Air Source

Ordinary Construction: Appliance in unconfined space may rely on infiltration alone. Unconfined space is >50 cu. ft./1000 Btu/hr. Appliance may draw air through minimum 100 sq. in. openings into unconfined space, one opening in upper 12-in, one in lower 12-in.

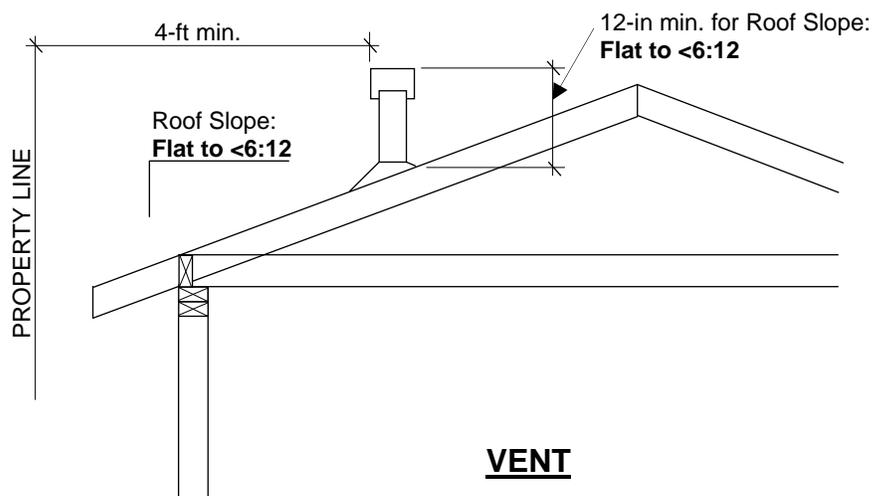
Outdoor Combustion Air Source

Unusually Tight Construction or Confined Space: Confined space is <50 cu. ft./1000 Btu/hr.

Refer to 2013 CMC Section 701.1 through 701.12



TOP VIEW



VENT